

Listing of Claims

1. (original) A process for making a thermoplastic vulcanizate (TPV) in a reactor, the process comprising:
 - a) forming a mixture in which a silane grafted resilient polymer component is dispersed in a thermoplastic matrix component by mixing in the reactor:
 - i) from 25 to 60 parts by weight of a resilient polymer component, per 100 parts by weight of the matrix component and resilient polymer component combined;
 - ii) from 40 to 75 parts by weight of the matrix component, per 100 parts by weight of the matrix component and the resilient polymer component combined; and
 - iii) a silane grafting agent, and
 - b) adding a solid water-generating agent to the reactor to crosslink the silane grafted resilient polymer component.
2. (original) The process of claim 1 wherein step a) further comprises mixing a free radical generator in the reactor.
3. (original) The process of claim 2 wherein the free radical generator is a peroxide.
4. (original) The process of claim 1 wherein step a) further comprises mixing a hydrolysis catalyst in the reactor.
5. (original) The process of claim 2 wherein step a) further comprises mixing a hydrolysis catalyst in the reactor.
6. (original) The process of claim 5 wherein the silane grafting agent, free radical generator, and hydrolysis catalyst are added as individual components to the reactor.
7. (original) The process of claim 5 wherein the silane grafting agent, free radical generator, and hydrolysis catalyst are added to the reactor as a mixture on a porous carrier polymer.
8. (original) The process of claim 7 wherein the porous carrier polymer is selected from the group consisting of polyethylene and polypropylene.
9. (original) The process of claim 1 wherein the silane grafting agent is a vinylalkoxysilane.
10. (original) The process of claim 9 wherein the vinylalkoxysilane is selected from the group consisting of vinylmethoxysilane and vinylethoxysilane.

11. (original) The process of claim 1 wherein the solid water-generating agent is selected from the group consisting of a metal oxide/carboxylic acid combination, Epsom salt, Glauber's salt, clay, water, talc, and combinations thereof.
12. (original) The process of claim 1 wherein the matrix component comprises at least one of a polyolefin, a polyamide, and a polyester.
13. (original) The process of claim 1 wherein the resilient polymer component comprises at least one of halobutyl rubber, ethylene-propylene rubber, ethylene-propylene-diene terpolymer rubber, natural rubber, synthetic rubber, amine functionalized synthetic rubber, and epoxy functionalized synthetic rubber.
14. (withdrawn) The process of claim 1 wherein the resilient polymer component is an ethylene interpolymer.
15. (original) The process of claim 1 wherein step a) includes mixing from 25 to 35 parts by weight of the resilient polymer component and from 65 to 75 parts by weight of the matrix component, per 100 parts by weight of the matrix component and resilient polymer component combined.
16. (original) The process of claim 1 wherein step a) includes mixing 30 parts by weight of the resilient polymer component and 70 parts by weight of the matrix component, per 100 parts by weight of the matrix component and resilient polymer component combined.
17. (original) The process of claim 1 wherein the reactor is a batch-type compounding apparatus.
18. (original) The process of claim 1 wherein the reactor is a continuous-type compounding apparatus.
19. (original) The process of claim 1 wherein the reactor is connected to a die suitable for extruding the product in the reactor into a shaped, fabricated product without an intervening pelletization step.
20. (original) The process of claim 1 wherein the matrix component has a crystallinity as determined by DSC of at least 40% and the resilient polymer component has a crystallinity as determined by DSC of no more than 40%.
21. (original) The process of claim 20 wherein the crystallinity of the matrix component and the resilient polymer component differ by at least 10%.

22. (original) The process of claim 20 wherein the crystallinity of the matrix component and the resilient polymer component differ by at least 20%.
23. (original) The process of claim 1 wherein the matrix component and the resilient polymer component are blended and simultaneously combined with the silane grafting agent.
- 24-32. (canceled)